

REMARKS

I. CLAIM AMENDMENTS

Claims 29 and 34-74 were considered in the final Office Action of September 23, 2008. Claims 34-60, 62 and 67-74 stand withdrawn from consideration as allegedly being directed to a non-elected invention, and claims 29, 61 and 63-66 stand rejected. Upon entry of this Request and Amendment, claims 29 and 34-63, 65, 67-78 will be pending in the application.

Claims 29 and 61 are amended herein to clarify that the tissue sample is a dermal-epithelial sample obtained from a patient, and that the cell suspension is free of serum xenogenic to the patient and of cellular congregates greater than 200 μ M. Claims 29 and 61 are also amended to provide that the suspension comprises a composition of viable cells autologous to the patient and having a comparable ratio of cell types. Claim 65 is amended for consistency. New claims 75-79 are added. Finally, claims 64 and 66 are canceled herein.

Support for the foregoing amendments and new claims is found in the application as filed at least at page 4, lines 10-16; page 8, lines 18-24; page 9 lines 24-30, page 10, lines 4-9 and lines 22-23; page 11, lines 8-25; and page 12, line 23-30. No new matter has been introduced by the amendments made herein.

II. RESPONSE TO REJECTIONS

In the September 23, 2008 Office Action, the Examiner rejected all of the claims (claims 29, 61 and 63-66) under 35 U.S.C. § 112, second paragraph. In addition, the Examiner rejected all of the claims under 35 U.S.C. § 102 over one or more of the following references:

1. U.S. Patent No. 4,418,691 to Yannas et al. ("Yannas")
2. European Patent Application No. 0 350 887 to Suzuki et al. ("Suzuki")
3. Hirobe, *Journal of Cellular Physiology* 152: 337-345, 1992 ("Hirobe")
4. Noel-Hudson et al., *In Vitro Cell and Developmental Biology- Animal* 31: 508-515, 1993 ("Noel-Hudson")
5. U.S. Patent No. 5,328,695 to Lucas et al. ("Lucas")
6. U.S. Patent No. 5,556,783 to Lavker et al. ("Lavker")
7. U.S. Patent No. 5,786,207 to Katz et al. ("Katz")
8. Osborne et al., *Biomaterials* 20: 283-290, 1999 ("Osborne")
9. U.S. Patent No. 6,207,451 to Dennis et al. ("Dennis")

In an effort to expedite prosecution of the application, Applicants have amended certain claims and canceled others. In making these amendments, Applicants are not acquiescing to the pending rejections and are not abandoning or surrendering any of the subject matter in previous versions or listings of the claims or in the application. Accordingly, Applicants reserve the right to pursue claims of similar, narrower, or broader scope in the future.

In view of the amendments to the claims and the following remarks, Applicants respectfully request reconsideration and withdrawal of the rejections made in the outstanding Office Action.

A. Rejections Under 35 U.S.C. §112, Second Paragraph

The Examiner rejected claims 29, 61, and 63-66 under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter regarded by the Applicants as the invention. Specifically, the Examiner requested clarification of "xenogenic serum" in claims 29 and 61, and "substantially the same as the tissue site" in claim 61. The Examiner also objected to "the cell population" in claim 61 and "the donor sample" in claim 64 for lack of antecedent basis.

Claims 29 and 61 have been amended in relevant part to clarify that the cell suspension is free of serum xenogenic to the patient and that the suspension comprises a composition of viable cells autologous to the patient and having a particular ratio of cell types. Furthermore, claims 64 and 66 have been canceled. In view of the foregoing amendments, Applicants respectfully request withdrawal and reconsideration of the rejections under 35 U.S.C. §112, second paragraph are respectfully requested.

B. Rejection Under 35 U.S.C. § 102(b) Over Yannas

Independent claims 29, 61 and dependent claims 63 and 65 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 4,418,691 to Yannas et al. ("Yannas"). In order for a claim to be anticipated each and every element of the claim must be present in the cited art. Applicants respectfully submit that Yannas does not anticipate each of

claims 29, 61, and 63-66, at least because Yannas does not disclose each and every element of independent claims 29 and 61.

Specifically, Yannas does not teach or suggest a cell suspension that is both free of serum xenogenic to the patient and free of cellular congregates greater than 200 μ m as required by Applicants' amended claims 29 and 61. By contrast, the cell suspension disclosed by Yannas necessarily contains serum xenogenic to the patient because the cells are treated in tissue culture medium "supplemented with 10% fetal calf serum." Yannas at column 16, lines 10-15. Yannas further reports filtering the serum-supplemented suspension, but only through sterile gauze. Yannas specifically states that the purpose of filtering is "to remove large tissue fragments." Yannas at column 16, lines 18-19, emphasis added. Sterile gauze is well-known in the art as a loose, woven fabric. While it has many uses, it is in no way effective for filtering down to the 200 μ m size. As such, the cell suspension of Yannas is not free of serum xenogenic to the patient nor free of cellular congregates greater than 200 μ m, as recited by claims 29 and 61 of the instant invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of this 35 U.S.C. § 102(b) rejection of claims 29 and 61, as well as claims 63 and 65 that depend therefrom.

B. Rejection Under 35 U.S.C. § 102(b) Over Suzuki

Independent claims 29, 61 and dependent claim 63 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by European Patent Application No. 0 350 887 to Suzuki et al. ("Suzuki"). In order for a claim to be anticipated each and every element of the claim must be present in the cited art. Applicants respectfully submit that Suzuki does not anticipate each of claims 29 and 61 at least because Suzuki does not disclose each and every element of independent claims 29 and 61.

Specifically, Suzuki fails to teach or suggest cells from a dermal-epithelial tissue sample as required by Applicants' amended claims 29 and 61. Instead, as the Examiner acknowledges, Suzuki teaches cells dissociated from heart tissues. Suzuki at page 5, lines 50-54. See also Office Action at page 10, first paragraph. Because heart only includes mesothelial, endothelial and myocardial cells, the cell suspension of Suzuki excludes cells from dermal-epithelial tissues.

For the same reason, Suzuki does not disclose a composition that includes keratinocyte basal cells, fibroblasts and melanocytes, nor a ratio of keratinocyte basal cells, fibroblasts and melanocytes that is comparable to a ratio of keratinocyte basal cells, fibroblasts and melanocytes present in the tissue sample as claimed by Applicants.

For at least the foregoing reasons, claims 29 and 61 are patentable over Suzuki. Claim 63 is dependent upon claim 61, and thus is also patentable over Suzuki. Applicants respectfully request that the rejection of claims 29, 61 and 63 under 35 U.S.C. §102(b) over Suzuki be reconsidered and withdrawn.

C. Rejection Under 35 U.S.C. § 102(b) Over Hirobe

Independent claims 29, 61 and dependent claims 63 and 65 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Hirobe, *Journal of Cellular Physiology* 152: 337-345, 1992 ("Hirobe"). In order for a claim to be anticipated each and every element of the claim must be present in the cited art. Applicants respectfully submit that Hirobe does not anticipate each of claims 29, 61, 63 and 65, at least because Hirobe does not disclose each and every element of independent claims 29 and 61.

Specifically, Hirobe does not disclose at least three of Applicants' claimed elements: (1) a cell suspension made from a dermal-epithelial tissue sample obtained from a patient, wherein the suspension is free of serum that is xenogenic to the patient; (2) a composition of cells autologous to a patient, and (3) a composition of cells having a ratio of keratinocyte basal cells, fibroblasts and melanocytes that is comparable to a ratio of keratinocyte basal cells, fibroblasts and melanocytes present in the tissue sample obtained from the patient. Instead, the cell suspension reported by Hirobe comprises a mixed population of cells derived from the whole skin of newborn mice in serum-containing medium that is then subjected to melanocyte- or keratinocyte-defined medium to produce a cell population that is dominated by melanocytes or keratinocytes. Hirobe at page 337, left column, third paragraph. See also Office Action at page 11, second paragraph. Hirobe completely fails to teach a cell suspension that comprises a cell population having a ratio of keratinocytes, fibroblasts and melanocytes that is comparable to the ratio present in a sample taken from a patient, and that is free of serum that is xenogenic to the

patient from which it the cells are derived. As such, Hirobe fails to teach each and every limitation of the instant claims.

For at least the foregoing reasons, claims 29 and 61 are patentable over Hirobe. Claims 63 and 65 are dependent upon claim 61, and thus are also patentable over Hirobe. Applicants respectfully request that the rejection of claims 29, 61, 63 and 65 under 35 U.S.C. §102(b) over Hirobe be reconsidered and withdrawn.

D. Rejection Under 35 U.S.C. § 102(b) Over Noel-Hudson

Independent claims 29, 61 and dependent claim 63 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Noel-Hudson et al., *In Vitro Cell and Developmental Biology- Animal* 31: 508-515, 1993 ("Noel-Hudson"). In order for a claim to be anticipated each and every element of the claim must be present in the cited art. Applicants respectfully submit that Noel-Hudson does not anticipate each of claims 29, 61 and 63, at least because Noel-Hudson does not disclose each and every element of independent claims 29 and 61.

Specifically, Noel-Hudson does not teach or suggest a cell suspension that is free of serum xenogenic to the patient as required by Applicants' amended claims 29 and 61. By contrast, Noel-Hudson's cell suspension necessarily contains serum xenogenic to the patient, because the cells are cultured in media containing 5% fetal calf serum. Noel-Hudson at Abstract and at page 509, left column, seventh paragraph.

Furthermore, Noel-Hudson fails to teach or suggest cells from a dermal-epithelial tissue sample or a composition that includes keratinocyte basal cells, fibroblasts and melanocytes. Instead, as the Examiner acknowledges, Noel-Hudson teaches cells obtained from human foreskin. Noel-Hudson at page 509, right column, paragraph 7. See also Office action at page 12, second paragraph. In addition, Noel-Hudson teaches cell suspensions of keratinocytes in the absence of fibroblasts. Noel-Hudson at Abstract. Thus Noel-Hudson fails to disclose a composition having keratinocyte basal cells, fibroblasts and melanocytes, and also fails to disclose a ratio of keratinocyte basal cells, fibroblasts and melanocytes that is comparable to a ratio of keratinocyte basal cells, fibroblasts and melanocytes present in the tissue sample as claimed by Applicants.

For at least the foregoing reasons, claims 29 and 61 are patentable over Noel-Hudson. Claim 63 is dependent upon claim 61, and thus is also patentable over Noel-Hudson. Applicants respectfully request that the rejection of claims 29, 61 and 63 under 35 U.S.C. §102(b) over Noel-Hudson be reconsidered and withdrawn.

E. Rejection Under 35 U.S.C. § 102(b) Over Lucas

Independent claims 29, 61 and dependent claim 63 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,328,695 to Lucas et al. ("Lucas"). In order for a claim to be anticipated each and every element of the claim must be present in the cited art. Applicants respectfully submit that Lucas does not anticipate each of claims 29, 61 and 63 at least because Lucas does not disclose each and every element of independent claims 29 and 61.

Specifically, Lucas fails to teach or suggest cells from a dermal-epithelial tissue sample obtained from a patient. The Examiner points to Lucas at Example 5 (column 11, lines 11-25) for skin tissue. Office action at page 14, second paragraph. However, the tissues used by Lucas are from white Leghorn chick embryos. Lucas at column 11, lines 1-4. Furthermore, Lucas does not disclose a composition that includes keratinocyte basal cells, fibroblasts and melanocytes, and also fails to disclose a ratio of keratinocyte basal cells, fibroblasts and melanocytes that is comparable to a ratio of keratinocyte basal cells, fibroblasts and melanocytes present in a tissue sample obtained from a patient as claimed by Applicants.

For at least the foregoing reasons, claims 29 and 61 are patentable over Lucas. Claim 63 is dependent upon claim 61, and thus is also patentable over Lucas. Applicants respectfully request that the rejection of claims 29, 61 and 63 under 35 U.S.C. §102(b) over Lucas be reconsidered and withdrawn.

F. Rejection Under 35 U.S.C. § 102(b) Over Lavker

Independent claims 29, 61 and dependent claims 63 and 65 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,556,783 to Lavker et al. ("Lavker"). In order for a claim to be anticipated each and every element of the claim must be present in the

cited art. Applicants respectfully submit that Lavker does not anticipate each of claims 29, 61, 63 and 65, at least because Lavker does not disclose each and every element of independent claims 29 and 61.

Specifically, Lavker does not teach or suggest a cell suspension that is both free of serum xenogenic to the patient and free of cellular congregates greater than 200 μ m as required by Applicants' amended claims 29 and 61. By contrast, Lavker's cell suspension necessarily contains serum xenogenic to the patient, because the cells are treated in tissue culture medium "supplemented with 17% fetal calf serum." Lavker at column 8, lines 35-40. Furthermore, Lavker does not disclose a composition that includes keratinocyte basal cells, fibroblasts and melanocytes, nor a ratio of keratinocyte basal cells, fibroblasts and melanocytes that is comparable to a ratio of keratinocyte basal cells, fibroblasts and melanocytes present in a tissue sample obtained from a patient as claimed by Applicants. Rather, Lavker discloses follicular keratinocytes. Lavker, column 5, lines 29-44.

For at least the foregoing reasons, claims 29 and 61 are patentable over Lavker. Claims 63 and 65 are dependent upon claim 61, and thus are also patentable over Lavker. Applicants respectfully request that the rejection of claims 29, 61, 63 and 65 under 35 U.S.C. §102(b) over Lavker be reconsidered and withdrawn.

G. Rejection Under 35 U.S.C. § 102(b) Over Katz

Independent claims 29, 61 and dependent claim 63 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,786,207 to Katz et al. ("Katz"). In order for a claim to be anticipated each and every element of the claim must be present in the cited art. Applicants respectfully submit that Katz does not anticipate each of claims 29, 61 and 63, at least because Katz does not disclose each and every element of independent claims 29 and 61.

Specifically, Katz fails to teach or suggest cells from a dermal-epithelial tissue sample obtained from a patient. By contrast, Katz only teaches a general method for tissue dissociation and producing a cellular suspension. Katz at Abstract. Furthermore, Katz does not disclose a composition that includes keratinocyte basal cells, fibroblasts and melanocytes, and also fails to

disclose a ratio of keratinocyte basal cells, fibroblasts and melanocytes that is comparable to a ratio of keratinocyte basal cells, fibroblasts and melanocytes present in a tissue sample obtained from a patient as claimed by Applicants.

For at least the foregoing reasons, claims 29 and 61 are patentable over Katz. Claim 63 is dependent upon claim 61, and thus is also patentable over Katz. Applicants respectfully request that the rejection of claims 29, 61 and 63 under 35 U.S.C. §102(b) over Katz be reconsidered and withdrawn.

H. Rejection Under 35 U.S.C. § 102(b) Over Osborne

Independent claims 29, 61 and dependent claims 63 and 65 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Osborne et al., *Biomaterials* 20: 283-290, 1999 ("Osborne"). In order for a claim to be anticipated each and every element of the claim must be present in the cited art. Applicants respectfully submit that Osborne does not anticipate each of claims 29, 61, and 63 and 65, at least because Osborne does not disclose each and every element of independent claims 29 and 61.

Specifically, Osborne fails to teach or suggest cells from a dermal-epithelial tissue sample as required by Applicants' amended claims 29 and 61. In direct contrast, Osborne teaches isolating keratinocytes by mincing the epidermis and isolating fibroblasts by mincing the dermis. Osborne at page 284, Section 2.3. Osborne's cell suspensions thus have isolated cell types: keratinocyte or fibroblast (but not combined). For the same reason, Osborne does not disclose a composition that includes keratinocyte basal cells, fibroblasts and melanocytes, and also does not disclose a ratio of keratinocyte basal cells, fibroblasts and melanocytes that is comparable to a ratio of keratinocyte basal cells, fibroblasts and melanocytes present in the tissue sample as claimed by Applicants.

For at least the foregoing reasons, claims 29 and 61 are patentable over Osborne. Claims 63 and 65 are dependent upon claim 61, and thus are also patentable over Osborne. Applicants respectfully request that the rejection of claims 29, 61, and 63 and 65 under 35 U.S.C. §102(b) over Osborne be reconsidered and withdrawn.

I. Rejection Under 35 U.S.C. § 102(b) Over Dennis

Independent claims 29, 61 and dependent claim 63 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 6,207,451 to Dennis et al. ("Dennis"). In order for a claim to be anticipated each and every element of the claim must be present in the cited art. Applicants respectfully submit that Dennis does not anticipate each of claims 29, 61, and 63 at least because Dennis does not disclose each and every element of independent claims 29 and 61.

Specifically, Dennis fails to teach or suggest cells from a dermal-epithelial tissue sample or a composition that includes keratinocyte basal cells, fibroblasts and melanocytes. Instead, as the Examiner acknowledges, Dennis teaches cells dissociated from muscle tissue from which skin has been removed. Dennis at column 12, lines 13-17. See also Office action at page 19, second paragraph. Accordingly, Dennis does not disclose a composition that includes keratinocyte basal cells, fibroblasts and melanocytes, and also does not disclose a ratio of keratinocyte basal cells, fibroblasts and melanocytes that is comparable to a ratio of keratinocyte basal cells, fibroblasts and melanocytes present in the tissue sample as claimed by Applicants.

For at least the foregoing reasons, claims 29 and 61 are patentable over Dennis. Claim 63 is dependent upon claim 61, and thus is also patentable over Dennis. Applicants respectfully request that the rejection of claims 29, 61 and 63 under 35 U.S.C. §102(b) over Dennis be reconsidered and withdrawn.

CONCLUSION

Applicants respectfully submit that the claims, as amended, are in condition for allowance and request favorable action. The Examiner is invited to contact Applicants' attorney at the number below if in the Examiner's view it would expedite the examination of the application.

The Commissioner is hereby authorized to charge any fee occasioned by the entry of this paper to Attorney's Deposit Account No. 50-3081.

Respectfully submitted,

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